Barcelona Supercomputing Center is at the heart of innovative hierarchical memory research. High Performance Computing (HPC) applications are constrained by the amount of DRAM. They need more memory, but adding more DRAM with the current technology is not feasible due to system power constraints. A team lead by Antonio Peña is using Intel® Optane™ persistent memory in App Direct mode as large capacity, manageable system memory with data objects intelligently allocated to optimize the performance of applications. The team is collaborating with Intel to help build a new software ecosystem around byte-addressable persistent memory to accelerate HPC applications while enabling more power-efficient Supercomputers.

Antonio Peña, senior researcher, Barcelona Supercomputing Center

“We’re trying to reduce server power while accelerating applications by using Intel Optane PMem and intelligently managing where the data is located and its movements. We can take advantage of the big memory footprint that the new technology offers and put more data closer to the processor.”

10X power reduction with Intel Optane PMem compared to DRAM DIMMS.¹

Barcelona
Supercomputing Center Research Accelerates HPC Workloads

Products and Solutions
- 2nd Gen Intel® Xeon® Scalable processors
- Intel® Optane™ persistent memory

Industry
Research

Organization Size
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